THE

JOURNAL OF GAS LIGHTING.

PUBLISHED QUARTERLY,

WITH AN INTERMEDIATE SUPPLEMENT ON THE 10TH OF EACH INTERVENING MONTH.

No. 17.] LONDON, JUNE 10, 1850. [SUPPLEMENT { Price 4d. Stamped. „ 3d. Unstamped.

SECRETARY Wanted.—Wanted for a Metropolitan Gas Company a SECRETARY, possessing Education and good address, whose qualifications extend to a thorough knowledge of Business and Commercial Accounts. Preference will be given to parties conversant in Gas affairs.

Address under cover to the Chairman of the Equitable Gas Company, 21, John-street, Adelphi, London, on or before the 17th of June next, marked "Secretary" in the corner of the envelope. Testimonials or copies of testimonials to accompany the applications.

LESMAHAGO GAS COAL.

JAMES FERGUSON, Lessee of the Auchinheath Gas Coalfield, the most extensive and valuable in the parish of Lesmahago, respectfully intimates to the Managers of Gas Works and Consumers of Gas Coal, that he is prepared to ship the best quality of the above well-known COALS at Glasgow or Leith,—and also to deliver them at the Railway Stations upon, or connected with, the Caledonian Railway,—to any extent which may be required.

Price, free on Board, or delivered at the Railway Stations, may be learned, by addressing James Ferguson, Gas Coal Works, Lesmahago.

*** No Agents employed.

Auchinheath, Lesmahago, 18th April, 1850.

CAST Iron Tank for Sale.—To be DISPOSED OF a CAST IRON TANK, 51 feet diameter by 14 feet 6 inches deep, with bolts, hoops, &c., complete, the whole nearly new. Weight about 110 tons. Application to be made at the Stafford New Gas Works, Stafford.

TO Gas Meter Manufacturers.—The Commissioners acting under the LYTHAM IMPROVEMENT ACT are willing to receive Tenders for a Supply of GAS METERS, with Cast-iron Cases.

Parties tendering are requested to state the dimensions and prices of their Meters, but the lowest tender will not necessarily be accepted.

Particulars may be known on application to Mr. Rofe, at the Preston Gas Works; and Tenders are to be delivered on or before Saturday, the 22nd of June, addressed to the Commissioners at Lytham, Lancashire.

TO GAS LIGHT AND COKE COMPANIES.
CANNEL COAL.

GARDEN and MACANDREW beg to offer the KNIGHTSWOOD CANNEL or PARROTT COAL. It resembles the famous Lesmahago Coal more closely than any other; produces a larger quantity of gas than Ramsay's celebrated Newcastle Cannel, and equals it in illuminating power.

The coke of this Coal lights easily, and is well fitted for domestic consumption, or for heating the retorts, as it leaves less ash or clinkers in the grates than any coke from Cannel yet tried.

Mr. Wright reports on it as follows:—

(Report on Cannel by A. Wright, Gas Engineer).

"This Cannel resembles the Lesmahago Cannel, but is not quite so dull in colour, which indicates a more advanced state of decomposition. The results I have obtained in the analysis correspond with this appearance, the weight of gas being less, while the weight of coke is greater. It yields gas freely, and at a high heat would give a greater number of feet than I have stated below, but that, I consider, a fair working average.

The specific gravity of the Cannel is 1·25. It yields

	Per ton. lbs.		
Coke	1182	Gas	9720 feet.
Tar	360	Sp. gr. . .	·590
Ammonia and Water	22	Illuminating power	·2
Gas	430	Newcastle Coal Gas, ·360, being . .	·1"
	1994		
Loss (principally tar)	246		
	2240		

For price and terms, apply to Garden and Macandrew, 34, Dowgate-hill.

London, June, 1850.

GAS LIGHTS.

J. GUISE, Gas Burner Manufacturer (late of No. 75, Margaret-street, Wilmington-square, but now at) 45, CLERKENWELL-GREEN, LONDON, avails himself of this opportunity of returning his sincere thanks to the Gas-fitters, and the Trade in general, for the liberal support he has received from them; and begs to inform them that he has removed his Gas Burner Manufactory to No. 45, Clerkenwell-green, for the better accommodation of business, and he hopes, by unremitting attention, to merit a continuance of their favours.

His Shadowless Burners and Catoptric Reflectors are warranted to be superior for light and economy to any thing of the kind ever yet invented; but, as various persons are now selling Burners purporting to be Guise's, which, in reality, are not, J. G., therefore, begs to announce that none are Guise's unless marked "GUISE, REGISTERED," or "GUISE, PATENT."

METROPOLITAN GAS INQUIRY.

In the Press, and will be published early in the ensuing week,

THE REPORT

of the Proceedings before the Committee on the GREAT CENTRAL GAS CONSUMERS' BILL.

H. Hebert, 88, Cheapside, London.

RAMSAY'S Garesfield Colliery, NEWCASTLE-UPON-TYNE.

COKING COAL and COKE of the best quality; superior CANNEL COAL, and FIRE GOODS of all descriptions.

Analysis of Garesfield Coke, by Dr. Richardson, of Newcastle:—

Carbon	97·60.
Ashes	1·55.
Sulphur	0·85.

Products of Ramsay's NEWCASTLE CANNEL COAL, as ascertained by Drs. Leeson and Miller, and G. H. Palmer, Esq.:—

Gas per Ton of Coal, cubic feet ..	9·667.
Specific Gravity	0·731.
Illuminating Power	1·85 to 2·03. ordinary Newcastle Coal Gas being ·1.
Coke per Ton of Coal	13½ cwt.

Broad Chare, Newcastle-upon-Tyne.

A. WRIGHT, Gas Engineer and Meter Manufacturer, 55, Millbank-street, near the Houses of Parliament, Westminster, respectfully calls the attention of Gas Companies and Engineers who are not yet provided with Station Meters to the fact that he has erected two of the largest machines of this kind in existence, the one for the Chartered Gas Company, London, the other for the Hibernia Gas Company, Dublin, for both of which he has obtained the highest testimonials.

To this branch of business A. W. devotes much attention, as well as to the Manufacture of all kinds of Experimental Machinery for Gas purposes.

Consumers' Meters of all sizes at the usual prices, with a liberal discount to wholesale purchasers.

CHARLES WALKER and SONS, Little Sutton-street, Goswell-street, London, respectfully solicit the attention of the Directors of Gas Companies and Engineers to their Registered Improved Gas Valve, for stations and street mains, which possesses the following advantages:—

1st. The valve will work as free in liquids, where others will stick, such as in tar, lime, &c., as in pure gas.

2nd. The working parts can always be supplied with oil, and when the valve is raised the gland slides off any incrustation on the spindle, which then receives a supply of oil from the box.

3rd. No risk of the valve falling down, and the most careless cannot damage the working parts.

4th. The valve need never work on its edge, as is the case with all rack valves.

5th. It has a legible index of the height of valve.

6th. They will last longer, and are cheaper than ordinary valves.

All the joints are truly planed; they can, therefore, be taken to pieces and put together with very little trouble, and they have had the experience of nine months' working in crude gas.

CHARLES WALKER and SONS take this opportunity of stating that they manufacture all Machinery and Smiths' Work for gas companies, and will be happy to furnish estimates.

PRICES:

10 in. to 14 in. diameter	...	13s. per in.	With Index for showing the opening of valve.
4 „ 9	„	... 14s. „	
2 „ 3	„	... 15s. „	

BRYAN DONKIN and CO.'S Improved GAS VALVES (Registered). Messrs. Bryan Donkin and Co. solicit the attention of Directors and other Gentlemen connected with Gas Companies, to their improved GAS VALVES, which have been adopted and approved of by the principal Companies and Gas Engineers of London and elsewhere, on account of the advantages and greater security attained, and the more perfect adaptation to the purposes required.

As the Inventors consider the superiority of these Valves now fully proved, it remains simply to quote the prices:—

	Per in. diam.	Separate Spigot and Faucett Fittings. Per in. extra.
From 14 in. to 10 in., inclusive,	13s.	3s. 6d.
„ 9 in. to 4 in.,	„ 14s.	2s. 6d.
„ 3 in. to 2 in.,	„ 15s.	1s. 6d.

The above prices include an Indicator, for showing the extent to which the Valve is open.

Bryan Donkin and Co. also solicit the attention of the public to their newly-invented Registered SAFETY GAS VALVE, or SLIDE-COCK, for service mains. It is constructed with plane surfaces, presenting a straight and full-sized bore for the flow of gas, avoiding the cone and being as durable as the best slide-valves.

Engineers' Works, Grange-road, Bermondsey.

IMPORTANT to Gas Works.— JAMES PHILLIPS and CO., 116, Bishopsgate-street Without, London, have made arrangements to supply Gas Companies and Contractors for Lamps with GLASS, at the following low net cash prices, cut to sizes and shapes, and delivered in any part of England or Scotland where there is railway communication:—

Crown glass,	19 oz.	to the foot, at	2½d.	per foot super.	
do.	18 oz.	„ „	4d.	„	„
Sheet glass,	13 oz.	„ „	2½d.	„	„
do.	16 oz.	„ „	3d.	„	„
do.	21 oz.	„ „	4d.	„	„

All orders addressed as above will receive prompt attention.

CLEGG'S New Patent Gas Meter.— LONDON—24, REGENT-SQUARE.

In these Meters the varying height of the water makes no difference in the measure.

PRICE OF STATION METERS.

To measure	60,000	cubic feet per 24 hours		£50
„	120,000	„	„	75
„	240,000	„	„	100
„	500,000	„	„	150
„	1,000,000	„	„	250
„	2,000,000	„	„	400

WILLIAM SUGG, Gas Engineer and Manufacturer of Patent Wet and Dry Gas Meters, combining all the latest acknowledged improvements; Brass Founder, Gas Fitter, and Lamp Contractor; Manufacturer of all kinds of Plain and Ornamental Gas Apparatus, and Contractor for the Erection of Gas Works. Designs and Estimates submitted; Station Meters and Governors of any size.

Gas Meter and Apparatus Works, 19 and 20, Marsham-street, Westminster.

WEST BROTHERS and CO.,
LATE
THOMAS WEST,

GAS METER MANUFACTURERS, BRASS FOUNDERS, &c., UNION-STREET, OLDHAM.

Station and Experimental Meters, Gas Pressure Registers, Gauges, Experimental Gas Holders, Governors, Slide Valves, &c. &c.

C. RICKETS,

MANUFACTURER of APPARATUS for advantageously applying GAS HEATS to CHEMICAL, CULINARY, MANUFACTURING, and various DOMESTIC PURPOSES, No. 5, AGAR-STREET, STRAND (opposite Charing-cross Hospital), London.

PATENT FIRE-CLAY RETORTS.

ORLANDO BROTHERS and RAILTON, Manufacturers of O. Brothers's Patent, beg to state that these RETORTS being made in ONE ENTIRE OPERATION, and in ONE PIECE of any required shape, length, breadth, and height, are not liable to Cracks and Fissures, of which there is a just and general complaint; and they are consequently superior to and cheaper than any hitherto manufactured.

Prices per foot in length:—

	At Blackburn.	In London.
12 in. by 12	7s. 0d.	8s. 3d.
14 in. by 12	8s. 0d.	9s. 6d.
16 in. by 12	8s. 6d.	10s. 3d.
18 in. by 15	9s. 6d.	11s. 6d.
19 in. by 13	9s. 6d.	11s. 6d.
24 in. by 15	11s. 6d.	13s. 9d.

exclusive of the angle-iron flanges.

References and further particulars may be obtained on application to the Patentee, Gas Works, Blackburn; or to Messrs. George Barlow and Son, 9, Charterhouse-square, London.

PATENT GAS METER MANUFACTORY,
No. 66, Snow-hill, London.

WILLIAM SMITH, by the improvements he has made in the Wet Meter, and which he has secured by her Majesty's Royal Letters Patent, the accuracy of their registry is rendered certain by the introduction of the adjusting slide and hydraulic, whereby a Perfect Water Level is readily obtained, and the Hydraulic precludes the possibility of abstracting water from the meter by increased pressure or otherwise, thus surmounting the great desideratum of the Wet Meter. In his Patent Equitable Gas Meter neatness and strength are combined, the backs and fronts of the case being stamped by powerful machinery out of thick plate iron (tinned or galvanized); and the internal construction is of the best metal, which will resist the action of any impurity in the gas.

Old Meters may readily have the adjusting slide and hydraulic applied, thereby having accurate measurement assured.

Station Meters, Governors, &c., made on the shortest notice.

W. BENNETT,
MANUFACTURER OF GAS-COOKING RANGES,
ST. THOMAS'S BUILDINGS,
LIVERPOOL.

M. SHEEN, Gas and Railway Lantern Maker, 90½, Holborn-hill, begs to inform Managers of Gas Works, &c., that she continues to contract and supply Lanterns on reasonable terms, and keep them in repair by the year.

HARPERS and MOORE, of the Delph Fire-brick and Clay Works, Stourbridge, invite the attention of Gas Companies, Engineers, Oven Builders, and all consumers, to their Stock of FIRE-BRICKS, LUMPS, or BURRS, QUARRIES, CLAY, and other Goods, a large assortment of which is always kept at their London Depôt, No. 7, Wenlock-road, City-road; also Melting-pots for Brassfounders and Metal Refiners. These articles are made in a very superior manner from clay of the very best quality, and have been proved by metal-melters (who can be referred to) to have withstood the most severe tests, and for very long periods.

Shipping orders supplied, and every description of Fire-clay Goods made to pattern or drawings on the shortest notice.

H. and M. particularly invite the attention of Gas Companies to a trial of their Fire-clay Retorts, which they are now making in a very superior manner, and of a quality which, on trial, will be found to surpass anything of the kind hitherto produced. The superior quality and peculiar admixture of their clays enable them to manufacture an article which fully admits of the necessary expansion and contraction, to allow of their being let down at the end of a season, when the usual supply of gas is not required, and again put to work for successive seasons without fear of cracking or leakage from any other cause.

H. and M. further beg to direct attention to the evidence of Mr. Croll, given before a Committee of the House of Commons, relative to the use of Clay Retorts (see "Gas-lighting Journal" of April 10, 1849, pages 43 and 44). The Clay Retorts there referred to by Mr. Croll were made at, and supplied from, the works of Harpers and Moore, as above.

Testimonials can be seen, and further information obtained, on application, if by letter, prepaid.

GAS Holder, 10 feet diameter, with Frame, &c. &c., small Furnace and Retort, Purifier, &c. &c., to be Sold cheap, at W. TURNER'S Brass Gas Fitting Factory, 18, Poland-street, Oxford-street, London. Also a Twelve-light cheap Gas Chandelier, suitable for an exhibition room, &c.

CARTER'S Patent Safety Gas Valve or Main Cock.—Experience has demonstrated the superiority of this Invention as a substitute for the common Main Cock, which is so soon out of order, either becoming fixed or leaky, neither of which is likely to occur with these Valves. They have been several years in use in many of our largest establishments: in the Bank upwards of one thousand are fixed, where, as elsewhere, they are highly approved.

Many of the Gas Companies have adopted them for their Street Lamp Cocks, and thereby prevent the possibility of waste.

They are manufactured of all sizes, from 2-8 to 12 inches bore, and are cheaper than any other description of Cock now in use.

THOMAS LAMBERT and SON,

Patentees, corner of Short-street, New-cut, Lambeth; Manufacturers of Block Tin Tube, and every description of Gas, Steam, and Hydraulic Apparatus.

PATENT FLEXIBLE GAS TUBING.

JAMES LYNE HANCOCK'S Vulcanized Indiarubber Hose Pipes and Tubing. Manufactory (and Warehouse), Goswell-mews, Goswell-road, London.

Gas Companies, Engineers, Gas Fitters, and the Trade generally, are respectfully informed this Tubing is now manufactured to any size, from ¼ inch bore and upwards, in 100-feet lengths, and perfectly cylindrical, either with or without a spiral wire inside.

VULCANIZED GLAZED FLEXIBLE TUBING, from ¼ inch up to 1 inch diameter, made in 24-feet lengths; or, covered with silk or worsted, up to 100 feet.

VULCANIZED HOSE, for FIRE ENGINES, BREWERS' USE, and for standing great pressures, (Rubber and Cloth combined), made to any length or size to fit the necessary screws, &c.

VULCANIZED INDIARUBBER AIR-TIGHT BAGS, made any size, for Gas Mains, with flexible tubes attached, and fitted with stopcocks complete.

WM. PARKINSON
(Successor to the late Samuel Crosley),
COTTAGE-LANE, CITY-ROAD, LONDON,

Begs most respectfully to announce that he has, in addition to the continued manufacture of GAS METERS, commenced (under Patent) the manufacture of Meters for measuring Water, Spirits, &c.

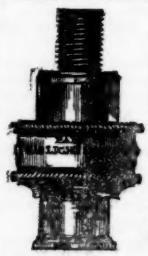
N.B. These Meters are as simple and durable as the Gas Meter, and as correct as that instrument under the most careful manipulation.

SHEARS and SONS' Patent Dry Gas METER.—Shears and Sons beg to call the attention of Gas Companies, Gas Fitters, and the Public to their Patent Dry Gas Meters, which possess the advantages of perfect registration under all pressures of gas, of great steadiness in the lights, of simplicity in construction, and of great durability; besides others, not the least of which are the form and arrangement of the valves, by which the objection to sliding valves is avoided.

After thoroughly examining and practically testing these Meters for a considerable time, the leading Metropolitan Gas Companies, to whom they have been submitted, have approved of them, and are now using them; and it is the opinion of a large number of the most experienced and competent gas authorities that these Meters only require to be more known to be generally adopted by gas consumers who desire to have the best Meter with the least trouble and inconvenience.

S. and S. also manufacture Wet Gas Meters, to which they apply their patent index.

BANKSIDE, London.



THE New Patent GAS LIGHT MONITOR, adapted to every description of Burner, and supplied at a cost placing it within the reach of every consumer of Gas, regulates the flame to any required height, economizing the consumption, and preventing the danger and inconvenience arising from the flaring and smoking of lights. It may be seen in daily use at the office of the Patentees, 20, King William-street, Charing-cross.

F. & C. OSLER,
44, OXFORD-STREET, LONDON;
MANUFACTORY—BROAD-STREET, BIRMINGHAM,
Manufacturers of Glass Chandeliers, Glass Lustres, Table Glass, &c. &c.
ELEGANT CRYSTAL GLASS CHANDELIERS, FOR GAS

(Made from "REGISTERED" DESIGNS), with GLASS BRANCHES, &c.; suitable for DRAWING-ROOMS and BALL-ROOMS. From £4. 15s., upwards. The more extensive use of GAS in private dwellings has induced Messrs. OSLER to direct their particular attention to the manufacture of this class of articles—which, with a view to their general adoption, are offered at very moderate prices. Purchasers can select from a great variety of patterns, to which additions are being constantly made.

THEATRES, CONCERT, ASSEMBLY, AND BALL ROOMS LIGHTED BY ESTIMATE, ON THE LOWEST TERMS.

GEORGE and SAMUEL CUTLER,
GASHOLDER AND BOILER MAKERS,
No. 21, WHARF-ROAD, CITY-ROAD,
LONDON.

Contracts for Tanks, Gasholders, Roofs, Purifiers, and all descriptions of Gas Apparatus executed on the most reasonable terms. Slide Valves, Steam and Range Boilers, and Smiths' Work, of the best materials and workmanship.

THE Registered Cylindrical Gas Stove possesses all the advantages which belong to gas stoves in general, with the addition of many peculiar to itself; its great distinguishing merit is the internal arrangement, by which none of the gaseous vapour escapes into the apartment so that a pure atmosphere is constantly preserved. It will be found of the utmost value in churches, chapels, manufactories, halls, libraries, bedrooms, nurseries, greenhouses, conservatories, &c.—Prices 28s., 35s., 40s., and 45s. each, at DEANE, DRAY, and DEANES, Domestic and Public Gas Fitting Manufactory, No. 3, Arthur-street East, London-bridge.

CAST Iron Retorts, Socket Pipes, and Connections of every size suitable for Gas and Water Works, Lamp Columns, Wrought Iron Tubing, Hot Water Pipes, Rain Water Pipes, and Eaves Gutters, in stock, and sold on the lowest terms, at LYNCH WHITE'S Iron Wharf, 66, Bankside, London.

IRISH MANUFACTURE.

JAMES GRAY and CO. continue to make every description of FIRE-BRICKS, TILES, and BLOCKS used in setting Retorts, all of the very best fire clay.

Irish Gas Companies can be supplied with as cheap and good an article, manufactured in their own country, as any they can import.

Fire-clay and Brick Works, Coal Island, near Dungannon, county of Tyrone, May 28, 1849.

N.B. Flooring, Ridge, and Oven Tiles, Water Pipes, Flue Linings, &c. &c.

TO GAS COMPANIES.

JOHN EUNSON, Gas Engineer and Contractor for the Erection of Gas Works, continues to manufacture CLAY RETORTS upon the most approved principle, and of the best material.

Wolverhampton, May 5, 1849.

ESTABLISHED IN 1834.

S. KING, Gas Meter Manufacturer, 21, Cock-lane, West Smithfield, London.

Meters made of the best materials and workmanship, with all the recent improvements, and warranted correct in registration.

ESTABLISHED 1827.

JOHN BEVERLEY and SON, Manufacturers of the Improved METALLIC GAS METERS, 68, BRIGGATE, LEEDS,

In returning thanks to Gas Companies, and those who have been pleased to patronize the use of their Gas Meters, take leave to observe that they still continue to make the outer cases of Cast Iron, which are carefully fitted and put together with screws, and the interior wheel or drum of a composition that has stood the test of years.

Dealers in all kinds of Gas Fittings, Tubing, &c. &c.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

CROLL and GLOVER, Patent Dry Gas Meter Manufacturers, Suffolk-street, CLERKENWELL-GREEN, LONDON, beg respectfully to call attention to the following extracts from testimonials in favour of their Meters. The respectability of the parties will be esteemed by all acquainted with gas matters as affording the most indubitable evidence of the superiority of their Patent Dry Gas Meters, proving that gas companies and gas consumers may rely on them for a just and unvarying registration, durability, and the absence of all trouble arising from condensation of water in the fittings, and the impossibility of their being stopped by freezing in the coldest climates.

CROLL and GLOVER take this opportunity of remarking to Gas Companies that the apprehension so generally entertained by them, viz., that if Dry Meters were introduced into their districts their Stock of Water Meters would be thrown on their hands, while this has not happened even with those Gas Companies who have for years back purchased none but Dry Meters; this apprehension ought to lead Gas Companies to a speedy investigation into the merits of Dry Meters, so that they may not, year after year, be increasing their stock of Water Meters, which they themselves apprehend must one day be thrown out of use.

CROLL and GLOVER humbly think that the following extracts prove that the merits of their Meter are entitled to prompt attention of Gas Companies.

Almost all the testimonials bear the date of November, 1848.

EXTRACTS.

"The Chartered Gas Company have purchased and fixed up above 2,000."—GEORGE LOWE, *Civil Engineer, F.R.S., &c., Consulting Engineer to the Chartered Gas Light and Coke Company, London.*

"We have in this district from seven to eight hundred, and are daily fixing more."—F. I. EVANS, *Superintendent at Chartered Gas Light and Coke Company's Station, Brick-lane.*

"I invariably found the flames perfectly steady, and the gas accurately measured."—A. H. STILL, *Superintendent at Chartered Gas Light and Coke Company's Station, St. Luke's.*

"I beg to state that out of 800 Meters of the square form, and anti-corrosive metal, I find only twenty have been entered in our return-book, chiefly for broken index-glasses. The company are continuing to purchase and fix up your Meters in considerable quantities."—WILLIAM MONRO, *General Superintendent and Engineer of the Phœnix Gas Light and Coke Company, London.*

"I have much pleasure in stating that the Meters we have received with your last improvements have given great satisfaction."—JOHN AIRD, *Superintendent of the Phœnix Gas Light and Coke Company's Station, Greenwich.*

"I have had some of them in use for nearly four years. In certain situations exposed to the influence of the climate I have found them to be the only description fit for use, as well as in confined and overheated situations, where the water in the Water Meters is acted upon by evaporation."—ROBERT LAING, *Secretary and Superintendent of the Independent Gas Light and Coke Company, London.*

"Having had, in all, up to the present time under my inspection 609 Meters of your manufacture, a very good opportunity has thus been afforded me of judging of their merits. The result of my observation in respect of registration and steadiness of light is, that the Meters have given perfect satisfaction."—D. METHVEN, *Engineer and Superintendent to the Commercial Gas Light and Coke Company, London.*

"The advantages which I have found attending the use of your Dry Gas Meters, in preference to the Wet Meters, are so important, that nothing would induce me to return to the use of the latter. As Station Meters yours have the additional advantage, that there is no water-line to attend to, or to be subject to neglect."—CHARLES DIXON, *Engineer of the Chichester Gas Light and Coke Company.*

"I have also had sufficient opportunity of knowing that they are not affected by the most severe frost, nor where one of them was fixed did I ever know of condensation taking place in the inside gas fittings of any premises."—SAMUEL PONTIFEX, *Manager, Winchester Gas Light and Coke Company.*

"We are now using your Meters solely."—CHARLES PURVES, *Manager, Gas Works, Gosport.*

"It is now nearly 2 years since we commenced using upwards of 100 of your Dry Meters, and during the whole of that time have not taken one of them down, for any cause whatever. This is an unvarnished, practical fact, and unprecedented, as far as my experience goes; therefore I have no hesitation in stating that I prefer them to every other Meter with which I am acquainted."—J. THOMAS, *Manager, Consumers' Protective Gas Light Company, Woolwich.* April 19, 1849.

"Previous to using them I held theoretical objections, which I can now say have been removed, and their superiority as an instrument of unvarying measuring capacity has been fully established."—EDWARD H. THORMAN, *Superintendent of the West Ham Gas Company.*

"I have delayed giving my opinion of your Meters until I had had another winter's experience; and, notwithstanding some of them were placed in the open air, not one became fixed. We have had a short winter, but the frost is very severe."—P. T. W. de TIMMERMAN, *Director of the City of Leyden Gas Works.* Jan. 26, 1849.

Station Meters, Station Governors, Pressure Registers, Experimental Meters, and Specific Gravity Apparatus.

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TO CORRESPONDENTS.

J. F. M.—*The Lisbon Gas Works were lately valued at* £28000, *and are mortgaged for a large portion of this amount. The actual expenditure has, we believe, exceeded* £45000, *and* £40000 *more is required to complete the undertaking, for the raising of which sum negotiations have been attempted in this country and failed. The mortgagees will probably have to foreclose their mortgage, and take to the property, unless a purchaser can be found.*

Several interesting communications have reached us, for which we are unable to find a place in the present number.

NOTICES.

Parties who receive the JOURNAL OF GAS LIGHTING *through Booksellers are requested to take notice that the Office for its publication is removed from* 21, *Paternoster-row, to* 58, *Cheapside.*

All communications and orders for Advertisements to be addressed to the Editor, 32, Bucklersbury, London.

The Terms of Subscription are :—

Six Shillings per Annum for the Quarterly Journal and Monthly Supplement, payable in advance.

Subscribers are reminded that the Subscriptions for the current year are now due, and they are requested to remit the same, by Post-office order, to the Proprietor. Those who desire that their remittances be acknowledged will please to enclose a postage stamp.

All back numbers exceeding three months' date will in future be charged double price, unless six or more consecutive numbers are taken at the same time. Nos. 6, 12, and 13 are nearly out of print, and can in future only be obtained with complete sets of the Journal.

Circular to Gas Companies.

Most of our readers will have already been informed through the medium of the daily journals, that in consequence of the gas companies at present lighting the city of London having for a time hesitated to compromise the interests of their shareholders, by yielding to the popular demand for such a reduction in the price of gas as would almost render the capital invested in their works unproductive, the Committee of the House of Commons appointed to investigate the application of the Great Central Gas Consumers' Company has decided, that an opportunity should be given to the promoters of the bill before them of carrying their schemes into operation, by declaring the preamble of the bill proved, with such modifications as would reduce it to its original proportions, viz., the supply of the city of London alone, to the exclusion of the outlaying districts through which its mains must necessarily be laid. Previously to the arriving at the above conclusion, they communicated to the parties the impression which the evidence laid before them had produced, in the following terms :—

"It is now agreed on both sides that gas shall hereafter be supplied to the citizens of London at 4s., with a possibility of further reduction in price.

"It has appeared in evidence that all parties originally objected to the introduction of a new company, if the object could be attained through the instrumentality of the companies already established.

"It has further appeared that the old companies steadily refused to make the required concession, and were only induced at last to do so by the organization and perseverance of the promoters of this bill, and that the consumers therefore are indebted to the promoters for the advantages thus obtained.

"Having referred to these particulars, this committee are willing, if the parties desire it, to adjourn for a short time the consideration of the preamble."

The promoters at once intimated their readiness to adopt the suggestion of the committee ; but the opponents, warned by the result of the previous negotiation, declined any compromise, and preferred an honourable fight to an ignominious surrender of their property.

Some days previously an offer had been made by the promoters to withdraw the bill on conditions to be mutually agreed, but which having also been declined, the following answers had been returned thereto :—

"City of London Gas Light Company,
"Dorset-street, Salisbury-square, 22nd May, 1850.

"Gentlemen,—Your letter to 'the Directors of the City Gas Light and Coke Company,' dated the 18th inst., has been read by them, and, in acknowledging the receipt of it, they have directed me to say that they believe the best answer they can make to it is by referring you to their memorial addressed, on the 29th of January, 1850, to the court of sewers; and, by an order of that court of the same day, entered on its minutes. A copy of that memorial is subjoined for your convenience.

"I am, gentlemen,
"Your obedient servant,
"D. BENHAM, Sec.

"*To the Directors of the Great Central Gas Consumers' Company.*"

"Chartered Gas-office, May 22, 1850.

"Sir,—I have to acknowledge your letter of the 18th inst., with the accompanying communication of the same date, and an extract from the evidence of Mr. Deputy Harrison before the committee of the House of Commons; all of which I have submitted to the Court of Directors of this company.

"I am instructed, in reply, to state that the directors have carefully considered the contents of the several documents; but that, in consequence of the course pursued by the Great Central Gas Consumers' Company, *when they entered into communication with them on a former occasion*, the directors feel great reluctance in again subjecting themselves to the chance of a similar proceeding; they are, however, quite disposed to pay all due attention to any official communication, emanating from the proper authorities, for giving full security to the public; and this would appear to be the proper course in every respect, inasmuch as Mr. Deputy Harrison, who is presumed to represent the majority of the commissioners of sewers, has stated in his evidence, that even if the old companies were to bind themselves by the clauses and restrictions of the proposed new company, he, as a commissioner of sewers, declared that such a concession would not be satisfactory.

"With respect to that part of your letter wherein you say, 'If justice be done to our shareholders,' the requirement is of so vague a character that the directors are unable, without further explanation, to enter upon the consideration of it.

"In conclusion, I am directed to assure you that the interests of the public and of the proprietors of this company continue to influence the court of directors in devising every means to secure the object of both.

"I am, sir,
"Your obedient servant,
"C. BURLS, Secretary.

"J. T. BARHAM, Esq., Secretary, &c., *pro tem.*,
"Great Central Gas Company."

"*To the Directors of the Chartered Gas Company.*
"The Great Central Gas Consumers' Company,
"48, Moorgate Street, London, 22nd May, 1850.

"Gentlemen :—Your letter of the 22nd instant has been this day read to the Board, and I am desired to refer you to the contents of their communication of the 18th instant, as affording a reply to the several other matters to which your letter relates. There is, however, one part of your communication which needs an answer. By the words 'Justice to our Shareholders,' we intended to convey to your company our meaning that, if the old gas companies are willing to become bound by Act of Parliament in the manner which the questions of counsel to Mr. Deputy Harrison implied, the directors of this company would be willing to leave it to the Members of Parliament for the city, or any other gentleman of station and character, to determine upon what terms the directors of this company ought, in justice to their shareholders, to be induced to withdraw their bill.

"This Board will meet again on Saturday, at 10 a.m.

"I remain, gentlemen,
"Your obedient Servant,
"(By order of the Board)
"J. T. BARHAM,
"Secretary, *pro tem.*"

A careful perusal of the evidence given on behalf of the promoters will convince any disinterested person acquainted with the subject, that a more slender case was never submitted to the consideration of a similar tribunal ; but, slight and contradictory as it was, it is a question whether the committee could, in the absence of any direct rebutting evidence, come to any other conclusion than the one they have arrived at, however objectionable may be the principle which has guided them. The masterly speech of Mr. Talbot, the leading counsel for the opponents, will long remain in the memory of his hearers as a model of forensic eloquence, and an able dissection of the evidence ; but the main questions, as to whether gas *can*, in the present state of the art, be made and delivered into the gasholders at Bow at 1s. 4½d. per 1000 cubic feet, including all repairs of mains, services, and apparatus, except consumers' meters, and be sold in the City of London at 4s., or less, with a profit of 10 per cent. upon the capital invested, were not even glanced at in that statement ; and the committee had therefore no alternative but to take the evidence in these respects as they found it. To those interested in the progress of our art, most of the other parts of the case sink into comparative insignificance when compared with these ; and though it might have scarcely been worth while to have wasted time and exhausted the patience of the committee in calling evidence to rebut that given as to the quality of the gas supplied, founded upon experiments which even the manager of a fifth-rate provincial gas work would have at once detected the unfairness of, yet, when it was proposed to distribute 736 million feet of gas annually with an initial pressure of

one inch, through 61 miles of mains, the mean diameter of which was only 6 $\frac{1}{10}$ inches, a large portion being laid at levels 30 feet below the point of supply, and the only evidence founded on any fact bearing upon this part of the case being to the effect that 120 million feet were annually distributed by the Commercial Company through 80 miles of main, of an average diameter of 10 $\frac{8}{8}$ inch, laid nearly level, with an initial pressure of one inch and eight-tenths, the question becomes more grave, and such a proposition, we think, merited investigation. The whole matter will, however, we presume, be again fully discussed before another tribunal, where a different policy must be pursued by its opponents.

The decision of the Commons' committee merits attention on many points. It is a deliberate exposition of the principles now guiding that branch of the Legislature in dealing with questions of this nature, and constitutes a direct premium to agitation. While admitting that one gas company is sufficient for all purposes, and that public objections, (such as breaking up pavements and the consequent obstructions of thoroughfares, increased liabilities to escape of gas, and the employment of two capitals instead of one), exist to unrestricted competition, yet it says, "We place the interests of the few individuals who have agitated this question above those of the citizens of London at large; and though all has been granted for which this agitation was originally set on foot, yet if you will not do them 'justice,' and induce them to withdraw their bill by taking their engagements upon yourselves, you must bear the consequences." The old companies have adopted the more manly course. They say, in effect, to the committee and to the public, "We have destroyed all pretext for the measure by such a reduction in the price of gas (to continue which we pledge ourselves) as will render any new speculation unremunerating. The promises held out are not capable of being realized, as will be found out hereafter if the scheme be proceeded with. We manufacture gas equal in quality, and at as low a cost as our opponents can, and the field is as open to us as it is to them. They have no advantage over us, and we are, therefore, prepared for a fair and honourable competition, and can afford to be ruined as well as they." In fact, many of the witnesses stated that they had staked a few pounds to produce this sort of warfare, not expecting any other benefit from their adventure; and these are the principles by which a committee of the House of Commons would appear to have been guided! It is true they have attempted to restrict them by striking out of the bill the power to sell gas in certain districts; but the principle once admitted, where is it to end? Suppose the inhabitants of those or any adjoining districts associate themselves together and raise a capital sufficient to lay mains, and Mr. Croll be inclined to manufacture gas for them at 1s. 6d. or 2s. per 1000 feet, they taking upon themselves all the expense of distribution—would not the Legislature be bound, on the application of those parties, to repeal the clause proposed to be inserted in the present act by which the Great Central Company are to be prohibited from supplying gas to any other body except to the citizens of London? Most certainly it would; though we doubt whether that branch of the legislature which is less under the influence of popular prejudice than the Commons will confirm such a principle, or give rise to the necessity for any such application. We must, therefore, await further events before we are in a position to judge what may be the permanent effect of the inquiry upon the interests of gas companies in general.

The returns made by the incorporated gas companies, in compliance with Mr. Hume's motion, were presented to the House of Commons on the 30th ult., and an abstract ordered to be printed, but the document has not yet been issued to the public. Many changes have, however, taken place since the returns were made, and more are, no doubt, in contemplation. Among others the Bristol and Clifton Gas Company have come to the determination to reduce the price of gas from 6s. to 4s. 6d. from the 1st proximo.

Communicated Articles.

ON THE USE OF CLAY AND IRON RETORTS IN THE MANUFACTURE OF COAL-GAS.

By DR. FYFE,

Professor of Chemistry, King's College University, Aberdeen.

In the discussion of the question, whether clay or iron retorts are most economical in the manufacture of coal-gas, the advocates for the use of the former have alluded to the greater quantity of gas afforded by them from the same weight of coal, and consequently have taken hold of that as a strong inducement to use them. They have, however, not referred to the quality of the gas afforded by their use.

It is well known that when olifiant gas is transmitted through red-hot tubes it deposits carbon and is converted to light hydrocarbon gas, thus becoming a gas having little or no value for the purposes of illumination. It is admitted by all that the deposit of carbon is much greater in clay than in iron retorts; and as this deposit must originate in the decomposition of the gas that is generated in them, whatever may be the cause of the decomposition, it must give aid to the deterioration of the coal-gas in so far as its illuminating power is concerned. Though it may be difficult to come to an accurate measurement of the amount of deterioration, yet some idea of its extent may be had by attending to the quantity of carbon deposited. The composition of olifiant gas is by weight 6 of carbon, to 1 of hydrogen. By volume it is 2 of vapour of carbon and 2 of hydrogen, all condensed into one volume of the specific gravity 980·6, compared to that of air as 1000; therefore 1 cubic foot weighs 525.3 grains. To convert this to light hydrocarbon one half of its carbon must be deposited, and 7 : 6 : : 525·3 : 450 2 and 450·2 ÷ 2 = 225·1; therefore the deposit of 225 grains in the retort indicates the decomposition of 1 foot of olifiant. Now, provided we know the quantity of gas sent off from a clay retort in a given time, the composition of the gas, and the amount of deposited carbon, we could, from these data, show the deterioration that the gas had undergone. I am not aware of any recorded experiments giving this information; I may, however, here allude to trials which have come under my own notice, not because they were made with the view of furnishing the data referred to, but they do so to a certain extent. In a set of three clay retorts, the internal heating surface of each of which was 30 superficial feet, the deposited carbon varied from 12 to 20 lb. per month; in each let us take the mean as 16lb. The quantity of gas evolved was not measured, but the coal carbonized amounted to 13½ tons; and, supposing a ton to yield 10,000 feet of gas, then the quantity given off from one retort was 130,500 feet, from which 16 lb. of carbon had been deposited. This gives the decomposition of about 500 feet of olifiant. This is no very great quantity in comparison to the total amount of gas; still, however, were the gas when generated deficient in olifiant, it would affect materially the illuminating power. I have observed the deposited carbon in other instances to be far beyond what has been stated above. In one retort of the same size as those referred to, the carbon was half an inch in thickness over the greater part of the internal surface; one superficial foot of it weighed rather more than 5 lb.; consequently the whole must have weighed about 150 lb. In another the carbon was upwards of two, indeed in some places three, inches in thickness; a piece of the size of six inches weighed 5lb.; a cubic foot must therefore have weighed 120 lb. Now, supposing the retort to have been lined throughout its whole internal coating with a similar crust, the deposited carbon must have amounted to several hundred weight; consequently some thousands of feet of olifiant gas had been converted to light hydrocarbon.*

It may appear to some an exaggeration that a retort of about a foot in diameter, and about eight feet in length, should contain such a large quantity of carbon, which to them is known as a substance of very little weight. This is not, however, the case with carbon deposited from gas; it is then a dense, compact body, of great weight. The specific gravity of the pieces which I have in my possession, taken from the retorts referred to, is very nearly 2000, compared to that of water as 1000; consequently a cubic foot will weigh about a cwt.

It is evident from this that the quantity of olifiant decomposed must be considerable, and that, therefore, the deteriorating influence on the quantity of the gas must also be in proportion.

I am aware that it is said by some that not only is more gas afforded by the use of clay retorts, but that that gas is of superior quality; and this they so far account for by supposing that a part of the tarry fluid that is formed in iron retorts is either not formed, or, if formed, is immediately decomposed in clay retorts, giving rise, not only to the greater quantity of gas, but also to gas of superior illuminating power. I suspect that this is mere assertion. I have yet to hear that any comparison has been made, experimentally, between the illuminating power of gas, from the same coal, generated in clay or iron retorts.

In estimating the amount of deterioration occasioned by the deposit of carbon, there is one circumstance to be attended to, which has been frequently mistated by gas-manufacturers and others. It has been said that when, by the deposit of carbon, olifiant gas is converted to light hydrocarbon, it is doubled in volume. Hence a method recommended by some chemists for promoting light hydrocarbon gas: though we can thus obtain the gas referred to, yet there is no alteration in the bulk of the olifiant employed. No doubt,

* Since writing the above I have seen a retort broken up after having been long in use. The deposited carbon weighed 460 lb.; consequently upwards of 14,000 feet of olifiant must have been destroyed. Supposing the coal-gas, when generated, to have lost one per cent. of olifiant, then nearly a million and a half cubic feet had been deteriorated in illuminating power.

were we to communicate hydrogen to olifiant to convert it to light hydrocarbon, we would then double the volume of the olifiant; but by causing the olifiant to deposit carbon there is no change in volume; one half of the carbon is deposited, the other half remains united with the hydrogen, which continues of the same bulk that it was when combined with the whole of the carbon, that is condensed into half of the volume it occupies when free and uncombined. Thus the sp. gr. of hydrogen is 68·8, that of the vapour of carbon is 421·5. Two of each unite to form olifiant; the four being after union condensed into one volume; consequently the sp. gr. of olifiant gas is 980·6 (451·5 × 2 + 68·8 × 2). The hydrogen, therefore, in olifiant occupies only half of its original volume.

The specific gravity of light hydrocarbon is 559·1; now deduct one half of the carbon, which is 451·5, from 980·6, and the residue is 559·1; in other words, a volume of olifiant gas, which has lost half of its weight of carbon, gives a gas of specific gravity 559·1; therefore the gas that it yields must be of the same volume as the olifiant itself.

Again, a cubic foot of olifiant, it has been already said, weighs 525·3 grains, and contains 450·2 grains, of carbon. A cubic foot of light hydrocarbon weighs 300 grains. Now, 525·3 − (450·2 ÷ 2) = 300·2; consequently a foot of olifiant, by the loss of half of its carbon, yields a foot of light hydrocarbon. It is well known also that two volumes of hydrogen and two volumes of carbon vapour, by their union, afford one volume of olifiant; and that two volumes of hydrogen and one volume of carbon vapour also yield one of light hydrocarbon; hence again there is no change in the bulk of the gas by the abstraction of carbon. It may also be stated in another way. When a volume of olifiant has electric sparks transmitted through it, carbon is deposited and hydrogen is evolved, occupying exactly two volumes. The same occurs with light hydrocarbon; consequently hydrogen, by union with a large or with a small proportion of carbon, affords the same bulk of olifiant and of light hydrocarbon.

It is necessary to keep this fact in recollection, in estimating the preference to be given to the use of the one retort or the other, in regard to economy, for it has been advanced by some of the advocates for iron retorts that the greater volume of gas which clay retorts yield, from the same weight of coal, is owing to the decomposition of the olifiant, and the consequent enlargement of the gas by depositing carbon, and being converted to light hydrocarbon.

Though we cannot in this way account for the greater quantity of gas which clay retorts yield, we may perhaps ascribe it to another cause, but acting in the reverse way; while at the same time it produces a deteriorating influence on the quality of the gas. I have already said that, though olifiant is not enlarged by depositing carbon, yet that olifiant by *acquiring hydrogen* is increased in bulk, or rather, I should say, that, when carbon is made to unite at first with a sufficient quantity of hydrogen, it gives double the volume of light hydrocarbon, that the same quantity of carbon would yield of olifiant were it to unite with a smaller proportion of hydrogen. Hence probably the cause of the greater bulk of gas afforded; for it is well known that carbon or hydrogen in the same coal can be made to unite in various proportions, according to the temperature to which it is raised, and to the method of applying the heat, and thus to yield a gaseous fluid varying in the per centage of olifiant and of light hydrocarbon.

This ought likewise to be kept in view in deciding the question regarding the two kinds of retorts, because another question may arise as to the relative proportion of coke. The *fixed carbon* of coal is that which is over and above the quantity necessary to combine with the hydrogen when that coal is heated; hence the fixed carbon, in other words the coke, may vary, according to the nature of the hydrocarbon evolved. Suppose a coal to contain two atoms of hydrogen and two of carbon, and that, by one method of carbonizing it, the two of hydrogen unite with one of carbon, to form light hydrocarbon, then one half of the carbon would be left as coke; but suppose that, by another mode of heating, each atom of hydrogen combined with an atom of carbon, to afford olifiant, then there would be no coke left: the whole would be dissipated in the form of gaseous matter. Now, though I do not say that this occurs with clay retorts, yet it may be so; and hence, while the quantity of coke may thus be diminished by the volatilization of the carbon, that excess of carbon thus sent off may be again liberated from the olifiant, and give rise to the lining in the retort.

Before endeavouring to settle the dispute with regard to the two kinds of retorts, all of these circumstances ought to be kept in view, and hence I would strongly urge those who have an interest in the matter to turn their attention to them. It is easy for them to put the claims for the one kind of retort in competition with those for the other, and if a quantity of gas is to be the criterion to give one the preference; but, with quantity, quality must likewise be taken into account; along with the amount of coke afforded. To the gas-manufacturers it may be advantageous to make use of clay retorts, because they may obtain a larger quantity of gas from the same weight of coal; but the public may in this way suffer to a large extent, unless the price of the gas is reduced. Even allowing that it is reduced, and the reduction must be trifling, still the public may be losers, because, though paying less, they may be getting an article inferior in value, not only as to illuminating power, but likewise as to durability; and consequently, by being obliged to use more, not to have the same light as before, they may ultimately be paying more, instead of less, than formerly. This is a point of great consequence to consumers, and it is one to which I would seriously draw their attention. At a time when the demand for cheap gas is in vogue, let the public be on their guard, lest they compel manufacturers to have recourse to methods of augmenting the produce at the expense of its quality, by which they will find that while they have got what they demanded they have paid dearly for it.

I trust it will not be supposed that, from what I have said, I am advocating the case of the one retort-maker or the other. We are not yet prepared to decide the question. What I wish is, that, to enable us to do so, those who have opportunity was to undertake experiments, to ascertain the quantity of gas, its quality as to illumination and durability, and also the amount of coke, from the different kind of coal, when carbonized in clay and in iron retorts. I say different kinds of coal, for it may be that one sort of retort may be better adapted for one kind of coal than for another. This no doubt will require a long-continued series of trials, yet the experiments are of such a nature that gas-manufacturers could easily undertake them. When this is done, then, but not till then, shall we be able to say, satisfactorily, whether the one sort of retort or the other should be used, and perhaps also when the one, and when the other, may be most beneficially employed.

Correspondence.

THE "CHEAP GAS" AGITATION.

Sir,—Referring to your last number, of the 10th instant, it is said that, when the proprietors of the Great Central Gas Company, at the London Tavern meeting, became impatient at the reading of the engineer's report, Mr. Croll volunteered to give a summary of it—upon which summary I offer the following remarks.

I wonder much, sir, that persons with a knowledge of the fraudulent schemes of many railway companies should still be willing to lend their names to such-like bubbles, and so incur serious liabilities, which are *inseparable* from speculations concocted and advanced for private interest alone.

It is necessary that the proprietors of this proposed undertaking should be informed, and *that the matter should be clearly understood*, whether, in case the company should be unprosperous and unable to pay *any dividend* at all,—whether, I repeat, in such a state of affairs Mr. Croll is still to receive his 1s. 4½d. per 1000 feet of gas? If so, what a serious liability will be incurred by the shareholders at large!

Besides which, it is by no means certain that some one of the other companies might not have supplied, at least, an *equal* quality of gas for 1s. 3½d. per 1000 feet! In such a case the contract itself may be a bad one! And there has been no inquiry in regard to this question—no wholesome and prudent competition sought for—no caution in exercise; and, however loudly the cry may have been excited against the ENORMOUS MONOPOLY OF THE OLD COMPANIES, these incautious proprietors have handed themselves over to Mr. Croll, tied and bound hand and foot, to pay him his *own price* for the supply of his *own article;* and to grant to him an entire and unconditional MONOPOLY for an indefinite time! Why was not an offer invited from Mr. Stephen White or some other luminous celebrity of the "cheap gas" school? They say they can make it for nothing, and many people believe them; why, then, not give *them* a chance, unless there is something to fear from a little wholesome competition.

It has been said that the station at Brick-lane, belonging to the old company, was thoroughly out of condition—in fact, was in such a state of complete disorder when Mr. Croll left—far beyond the power of the superintendent to remedy; so that the company's engineer was employed for a considerable length of time to put the establishment into a proper state, and to restore it to a working condition.

From the facts above stated, it seems probable that, in case any loss should be sustained by this ill-advised speculation, such loss will fall upon the shareholders at large, and *not* on Mr. Croll! *He* might be amply indemnified as a *gas-seller* for any loss sustained as a gas-proprietor. I do not wonder, therefore, that the shareholders in general are now uneasy and fearful—unwilling to subscribe more money, however urgent the appeals and wants of the managers may be, It is quite clear, sir, who are to be sacrificed. Mr. Croll is playing a safe card! The shareholders are, without reflection, trusting themselves to Pearson, Croll, and Co.

Should, however, the proposed bill be obtained, a much larger amount of capital will have to be provided for, and the responsibility of shareholders increased in proportion. Mr. Croll said:—"I have contracted to manufacture the gas at 1s. 4½d. per 1000 cubic feet. The cost of production and distribution would amount to £31,125. The whole capital required would amount to £130,333, 10 PER CENT. ON WHICH WOULD BE £13,033. 15s." The trifling inaccuracy in the reckoning is not worth notice.

What a piece of consummate chicanery, however, is here put into action! There are no data whatever given on which to rest the assumption that 10 per cent. profit per annum on capital *can* be realized. Why, sir, the average of the dividends of all the chief gas companies in the metropolis has been little more than 5 per cent. per annum, with gas at 6s., 7s., and 8s. per 1000 feet!

And rely upon it, sir, Mr. Croll's management has not been superior to that of other superintendents; nor is it likely to be any better for the future; although he may sustain the multiform character of projector, engineer, proprietor, gas-seller, meter-maker, and coal-seller, all at an enormous charge. Why, really, sir, such incongruous and incompatible engagements were never before witnessed as being sanctioned and entered into by rational men. This is monopoly with a vengeance! The interests between the parties are antagonistic! Mr. Croll will want the highest prices for all materials supplied! The company to be prosperous ought to buy them on the best conditions. It ought to seek out the best markets, terms, and conditions, as circumstances and offers may change. But here the company is tied and bound hand and foot.

Besides which, no estimate appears to be made for loss by leakage, which experience tells us has been as much as 30 per cent. Then no charge is made for interest of money; and no *profits* can be reckoned until common interest has been paid; because this revenue is obtainable without risk. Neither is anything taken into account for insurance of gas premises, which must be estimated at a high rate, the insurance offices being indisposed to insure such property. The whole statement made by Mr. Croll is so vague and deceptive that it has much the appearance of being intended to mislead.

Finally, should the old companies be driven to make a sacrifice, and to sell their gas at 2s. 6d. per 1000 feet for a few years, then by whom are the losses of this invading and reckless company to be borne? Let the proprietors of the Great Central Gas Company reflect on these plain facts.

London, May 15. MENTOR.

Parliamentary Intelligence.

GREAT CENTRAL GAS CONSUMERS BILL.

The proceedings in this case terminated on the 7th inst., the preamble having been declared to be proved on the 30th ult., and the remaining sittings being devoted to discussions on the clauses.

Our next number will contain a report of parts of these proceedings; but, as they cannot be given on the largest sheet of paper which is allowed by the Stamp Act, we shall be compelled to delay the entire publication till space can be appropriated in the successive numbers. The whole are, however, printed in a separate pamphlet, and may be obtained at 88, Cheapside.

Register of New Patents.

CHARLES COOPER, Southampton-buildings, Chancery-lane, for "*improvements in the treatment of coal, and in separating coal and other substances from foreign matters, and in the manufacture of artificial fuel and coke, and in the distillation and treatment of tar and other products from coal, together with apparatus employed for the said purpose.*" Patent dated November 2, 1849.

The patentee describes and claims—

1. The purification and separation of coal, by taking advantage of the difference of their specific gravities [by causing the coal to pass through a jogging sieve, which is furnished with a number of partitions composed of perforated metal plates—the perforation of each being smaller than those of the preceding, and having portions of its sides cut away, whereby the different-sized lumps of coal will be shook over into receivers, and the fine dust delivered from the last division. The foreign matters, such as pyrites, may be easily removed by hand from the various collections of coal, inasmuch as they contain no dust, while the dust will be comparatively purified in consequence of the coal being of a more friable nature than the foreign matters.]

2. The classification of coal according to size when in combination with water sifting.

3. The combination of a continuous acting and classifying water-sifting apparatus for separating coal from foreign matters, and also for separating from each other, substances of different specific gravities. [This apparatus consists of a water-trough, in the upper part of which is a perforated plate to support the coal. The reservoir is divided into two portions by a vertical partition reaching nearly to the bottom. In the smallest of these divisions there is a plunger, which is made to work up and down. An inclined board is supported in the largest division, with the lower end some way beneath the bottom of the vertical partition. The effect of this arrangement is, that each down stroke of the piston will displace the water, and drive it through the perforated plate, and agitate the coal and other matters placed thereon, temporarily holding them in suspension, whereby, when the agitation has subsided, the foreign matters will be found arranged in layers according to their respective specific gravities, and the coal at the top of all, which is subsequently removed as required.]

4. A mode of constructing coke ovens, [which consists in making them shallower and longer than heretofore, with one end larger than the other, and with openings along the centre of the floor, and in the lower parts of the sides, which communicate with flues provided with doors, for the purpose of changing the direction of the currents of air alternately. Both the back and front of the oven are furnished with doors.]

5. The use of a moveable arch or cover to the oven [which may be moved out of the way to allow of its being hearged with coal.]

6. Increasing the density of the coke by ramming in the coal [around iron cylinders, which are placed in the oven with their lower ends in the holes in the floor, and, after the oven is filled, withdrawn. The coal is previously damped, and the oven is to be supposed to have been just emptied, so that its heat will be sufficient to ignite the coal, especially near the hollows. The top is put on the oven, and covered over with coke or ashes, and some of the flues are closed, and the rest shut so that the air which enters (say) the holes along the centre of the bottom, will escape through those on the sides, and be conducted to the ovens on either side which will be thereby heated. The current of air through the oven is repeatedly changed by alternately reversing the positions of the doors of the flues; and when the coal has burnt long enough, all the doors are closed to exclude the air, and the coking allowed to finish.]

7. A mode of discharging the coke from the oven [by means of an iron plate which fits the opening in the smaller end, and is forced by means of a screw into the oven, so as to drive the coke out of it.]

8. A mode of extinguishing coke by discharging it from the oven into a close vessel [which is composed of two casings, with water between, and is about the size of the oven. It is fitted with a door, which is closed as soon as the coke is in; and the steam generated by the heat is conducted into the coke by a pipe leading from the top of the water space, to expel the air and complete the coking operation. This vessel is provided with wheels to facilitate its removal from the ovens to the sheds into which the coke is discharged and stored.]

9. Coking coal by the use of alternating currents of air passed through the coal by channels formed in the coal itself, and communicating with flues.

10. An arrangement for collecting the ammoniacal liquors and surplus tar [which consists in receiving the volatile gases into channels surrounded with water, wherein they are condensed.]

11. A method of distilling tar by the introduction of steam into it, and the partial removal of atmospheric pressure, and in purifying and washing the oil; also in the application of this process to the distillation of naphtha and other products of coal. [The tar is placed in a boiler, and when it is raised to near the point of ebullition, steam is admitted into the midst of the tar through a horizontal pipe, fitted with two rose ends, and connected with the source of supply by a vertical pipe. Ebullition speedily ensues, and the volatile matters are led into a condenser fitted with an air pump, by which a partial vacuum is constantly maintained in it. A vertical pipe rises in the condenser to nearly the top, and opens at bottom into a water reservoir. By reason of the vacuum in the condenser, the water will rise in and overflow the vertical pipe, mingling with the volatile vapours, and condensing them. The oil is drawn off as required, and the water allowed to return to the reservoir.]

12. The general arrangement and combination of the mixer and compressor for making artificial fuel. [The mixer consists of two concentric cylinders placed one within the other. The internal periphery of the outer cylinder, as well as the external periphery of the inner one, are both furnished with scrapers, which prevent the adhesion of the materials (small coal and pitch) to the sides, and being bevelled drive them down. The inner cylinder, which is made to revolve by toothed gearing from the prime mover, has a fire lighted in it, and the space between the two is filled with the materials. The products of combustion escape under the large cylinder, and pass around it through flues to the chimney. By these arrangements, the materials are melted and intimately mixed together, after which they are allowed to escape at bottom into moulds, supported in a circular rotating frame, which are fitted with bottoms that are carrried on spindles having wheels on the lower part to enable them to travel over a circular rail, concentric with the frame, along with the moulds. The spindles are maintained in a vertical position by guides on each side of the rail. As the frame revolves, it brings the full moulds underneath a rotary endless chain of plates, linked together. At this point the rail is slightly inclined upwards, so as to lift the spindle and the bottom of the mould which it carries, and thereby compress the contents of the latter. After this, the rail inclines downwards to allow of the mould and brick of fuel passing clear of the plates. Subsequently, but before coming under the mixer, the rail again inclines upwards, so as to protrude the brick of fuel above the mould and facilitate its removal therefrom by hand to a table.]

JOSEPH PIERRE GILLARD, Paris, gentleman, for "*certain improvements in the production of heat and light in general.*" Patent dated November 22, 1849.

Claims.—1. The productiion of hydrogen gas by decomposing water in furnaces and retorts serving to distil coal.

2. A process for producing hydrogen gas and a small quantity of oxide of iron.

3. Illuminating by means of electro-magnets put in motion by any mechanical power.

4. Producing hydrogen and oxygen by means of magnets put in motion simultaneously by any suitable power, the two gases being collected in separate vessels.

5. Rendering platina and other unalterable and inoxydizable metals illuminating by the combustion of hydrogen and oxygen.

6. Rendering platina and other non-oxydizable metals more or less illuminating by means of hydrogen, or of hydrogen and oxygen, and also of oxygen and hydrogen combined.

7. Illuminating by heating platina and other metals to a luminous white heat by means of oxygen, burnt either alone or combined with hydrogen.

8. Deoxydizing ores by means of hydrogen, or of hydrogen and oxide of carbon, or hydrogen and oxygen combined.

9. A mode of producing pig iron and purifying metals.

MESSRS. HULETT AND PADDON'S PATENT GAS METERS AND GAS REGULATORS.

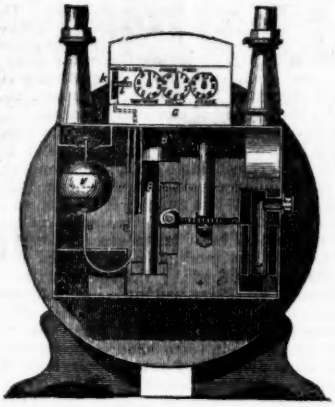

Fig. 1.

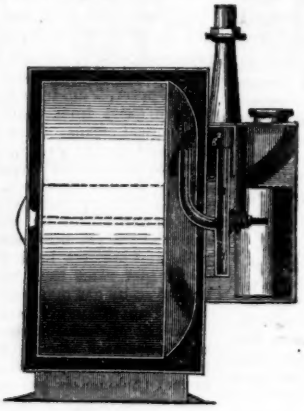

Fig. 2.

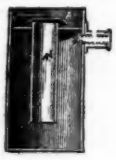

Fig. 7.

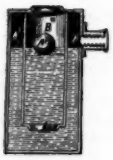

Fig. 5.

Fig. 6.

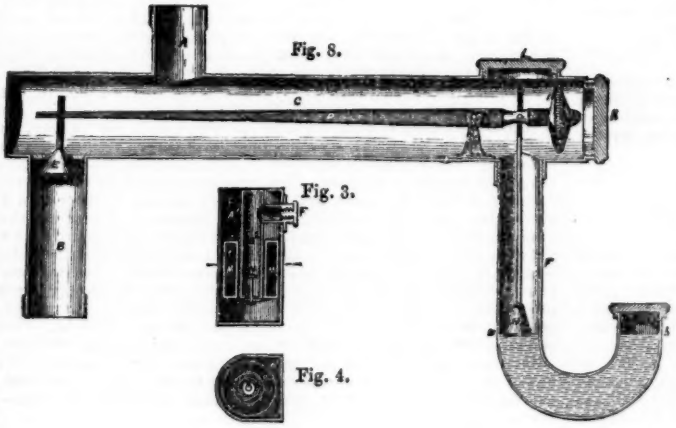

Fig. 8.

Fig. 3.

Fig. 4.

Some effectual mode of keeping the water charge constantly adjusted to the true working level has long been felt to be a desideratum. Messrs. Hulett and Paddon have made a near approach to this desirable result by exhibiting the actual level of the water to the eye on the face of the dial plate, so that the consumer may at all times satisfy himself whether or no any more than the proper charge of water is contained in the meter; whilst the inspector, on going his rounds, will perceive at a glance any deficiency in the correct water level.

This indicator of the water level is represented in fig. 1, and thus described:—

"A is the ordinary float valve, to the bottom of which there is attached a curved rod or wire *a a*, the longer arm of which passes up through a tube C into the small box G, which encloses the registering machinery, and carries at top a pointer *c*; *k* is a vertical slot made in the dial plate, up and down which the pointer *c* is free to move; and *l* is a mark on the dial plate, which indicates the true level to which the water in the meter should at commencement be adjusted. As the float rises or falls, the pointer *c* necessarily rises or falls with it above or below the standard point *l*, and thus becomes a constant indicator of any escape or deficiency of water in the meter. Instead of the long arm of the rod or wire *a a* forming itself the pointer, it may be made to act on a separate pointer having a horizontal motion, and indicating on the segment of a circle the degree of divergence from the true level of the water; but we prefer the arrangement we have described as, on the whole, much simpler and more satisfactory. If preferred, also the indicator may be connected to a separate float; but this we deem superfluous."

It is well known that gas may be easily drawn off unregistered from the ordinary syphon-plug screwed at the bottom of meters, and also from the side or overflow pipe (after sucking out the water, which can be done notwithstanding the dip-pipe), by fitting on to those orifices a moveable and flexible tube (vulgarly called a "Jemmy"), which, on the approach of the inspector, is removed, the screw plugs being then replaced as before. Messrs. Hulett and Paddon have effectualy closed the door to these frauds by the several methods which are described as follows:—

As to the Syphon Plug.

"In the common water meter, the gas is conveyed into the measuring drum by a curved pipe or syphon, both ends of which are left open. From the curved end of this pipe a straight tubular piece projects downwards, and is closed at bottom by a screw-plug accessible from the outside, the use of which additional piece and plug is to enable the syphon to be occasionally employed for the collateral purpose of drawing off any excess of water which may accumulate in the meter and interfere with its due action. But there is nothing to prevent parties fraudulently disposed from making use of these additions to the syphon for the purpose of drawing off gas (instead of water), without its passing through the drum, and no doubt this is frequently done. Now to prevent the possibility, in future, of such an abuse, we do away with the plug referred to altogether, and make use of the syphon for its single legitimate purpose of conveying the gas from the inlet box to the drum. Fig. 1 is a front elevation, and fig. 2 a side elevation of a gas meter in which the preceding and other improvements included in our invention are embodied, parts of both figures being in section. B, fig. 1, is the syphon. Both legs are carried higher than usual, and the ends of both are enclosed in covers inaccessible to the water, one by a cover B 1 placed inside the drum, and the other by a cover B 2 attached to the front of the meter. All access to the syphon from the outside is thus excluded, and any fraudulent abstraction of gas through that part of the apparatus rendered impossible. We still leave a short tubular piece *a* projecting downwards from the bottom of the syphon as shown in fig. 2; but it is for the purpose only of receiving any moisture which may arise from the condensation of the gas."

As to the Overflow Valve.

"*Thirdly.* Our improved overflow valve, is so constructed that it can be applied to that purpose alone, and cannot be used under any circumstances for the fraudulent abstraction of gas. A section and plan of this portion of our improvements are given, on an enlarged scale, in figs. 3 and 4. A 1 is a waste reservoir formed on one side of the square box in front of the meter; this reservoir is closed at bottom, but open at top for the reception of the surplus water when the proper level is exceeded. B 2 is a vertical pipe enclosed in A 1, which is open at bottom, but closed at top; and b 2 a mouthpiece, which branches off at right angles from B 2, and has a screw-plug F fitted to it. M is a cylindrical float which encircles B 2, and is free to move up and down it. N is a conical valve placed inside B 2, the spindle of which is attached by a cross piece to the bottom edges of the cylindrical float M. As water flows over into the reservoir A 1, it raises the cylinder M, which, by its ascent, opens the valve N, and admits the waste water into the pipe B 2, from which (on that pipe being filled) it may be drawn off by taking out the plug F. When the cylinder M falls, the valve N drops with it into its seat, and now serves to close the tube B 2 against the passage of any gas in that direction. The plug F may then be taken out, but neither water nor gas will follow.

A modification of the preceding apparatus is represented in fig. 5. A 1 is a reservoir, formed as before, at the side of the square box in front of the meter. B 2, a tube which occupies the centre of that reservoir, but does not descend quite to the bottom thereof; at top, this tube is soldered to a corresponding aperture in the reservoir, and at bottom it has an opening, *b*, which the float-ball A 0 fits upon. F is a mouth-piece and plug, as before described. When the meter is charged with water, and the reservoir, A 1, is, consequently, also filled, the ball A 0 floats at the top, but as soon as the water descends so far as to leave the tube B 2 free, the ball falls down upon the aperture *b*, and prevents the exit of any gas through that part of the reservoir communicating with the mouthpiece F.

Another modification of this part of our invention is shown in fig. 6. A 1 is an outer case. A 2 is a compartment formed at the top of the case, which is constantly open to the inflow of the surplus water, but is closed at bottom on the line *a b*. A 3 is a central tube, similar to the tubes B 2 of the preceding arrangements, which has a float valve, B, adapted to the top of it, and opens at bottom (only) in to the portion A of the case which surrounds the tube and communicates with the mouthpiece, F. The overflow water rises in A 2 till it raises the float B, which allows it to pass over, into, and down the tube A 3, from which it ascends in A 1 to the mouthpiece, where it is discharged. It follows that, until the float B is raised, there can be no communication between the mouthpiece and the interior of the meter, and that the water which serves to raise that float must serve also to seal the mouthpiece against any escape of gas. The moment there is no water interposed between the mouthpiece, F, and the interior of the meter, the valve B drops of necessity into its seat, and prevents any flow of gas towards the mouthpiece.

Fig. 7 exhibits an arrangement, which is precisely the same in all respects as fig. 6, with the exception that in place of the float valve used to close the top of the central tubular compartment A 3, a hollow cap is used."

The last of Messrs. Hulett and Paddon's improvements which we have to notice, is an apparatus for regulating the flow of gas through pipes, so that whatever may be the pressure of gas in the street mains, an uniform pressure may be maintained in the passage of the gas through the burners:

"A sectional view of this apparatus is given in fig. 8. A is the inlet pipe from the meter or gas main; B the pipe leading to the burners; C is a chamber containing a lever D, which is centred at D 1. To the longer arm of the lever D there is affixed a conical valve E, which regulates the flow of gas into the pipe B. F is a bent pipe or inverted syphon, which is filled with mercury up to the line *a b*. When gas is admitted into the instrument, the greater the pressure with which it is forced through the pipes, the more it will press upon the surface of the mercury in the limb G of the syphon, whereby the counterpoise weight H will descend, and cause the valve E to close up the aperture in the pipe B, and so equalize the flow of gas according to the pressure. I is a counterpoise, by which the action of the instrument can be adjusted to any degree of pressure; this counterpoise can be screwed further out or in upon the lever at pleasure, by undoing the screw-cap K. L is another screw-cap for adjusting in like manner the floating counterpoise K. Other modes of applying a mercurial column to equalise the flow of gas may readily be devised; but we prefer that which we have described, and do not confine ourselves to any particular mode.

FRANK CLARK HILLS, Deptford, Kent, manufacturing chemist, for "*an improved mode of compressing peat for making fuel or gas, and of manufacturing gas, and of obtaining certain substances applicable to purifying the same.*" Patent dated November 24, 1849.

1. The peat-compressing apparatus of Mr. Hills consists of two troughs, with gratings for bottoms. Above each of these gratings there is laid a quantity of coarse gravel, or other filtering medium, of a size sufficiently large not to pass through the openings, and above that successive layers of finer gravel, and, last of all, one of sharp-pointed sand. A sheet of perforated metal is placed above the last layer of sand, and supported on cross bars, to prevent it from giving way under pressure by the subsidence of the sand and other filtering media. The upper part of the trough is furnished with a cover, bolted to the edges, or kept down by a weighted lever, and the filtering medium is placed in the trough up to a certain point only, in order that there may be a space between the cover and the perforated plate, in which a plunger travels to and fro. The size of the outlet of the trough is regulated by means of two adjustable plates or rollers, for the purpose of regulating the pressure to which the peat is to be subjected. The open ends of the two troughs are placed opposite one

another, and their respective plungers are attached to either side of a slotted plate, in which works a crank shaft, driven from a steam-engine or other prime mover, so that at each revolution one of the plungers will be driven forward and the other drawn back. Each trough is provided with a hopper, filled with peat. When the plungers are drawn back, a supply of peat falls down, which at the next stroke is propelled towards the contracted outlet, and so on at each forward stroke of the plunger, until the whole of the moisture is driven through the perforated plate and filtering media, and the solid matters are expelled from between the adjustable plates or rollers in a dry and compressed state.

2. The improvements in "purifying" gas consists in depriving it of its sulphuretted hydrogen, cyanogen, and ammonia by passing it through the subsulphates of iron, oxychloride or the hydrated or precipitated oxides of iron, either alone or combined with sulphate of lime, sulphate or muriate of magnesia, baryta, strontia, soda or potash, and mixed with sawdust, breeze, or other absorbent material, which will allow of the passage of gas through it. The hydrogen will combine with the oxygen, and form water, and precipitate the sulphur; while the ammonia will partially combine with the water, and the rest be absorbed. When the absorbing materials become inert, they are revivified by passing a current of atmospheric air through them, which drives off the volatile gases, and revivifies them. The passage of air is created by connecting, for the time being, the purifyer to a chimney or other exhaust; and the rest of the ammonia is condensed by means of suitable apparatus placed in the pipes leading to the chimney.

3. Mr. Hills proposed to apply the waste heat of distilling retorts to the heating of what he terms "warming retorts," in which the coal is placed prior to its distillation, in order to economise heat in the latter process.

4. To obtain an equable and intermittent supply of the necessary water to gas scrubbers, it is proposed to place above the purifying vessel a reservoir to receive the water from the source of supply. This vessel is made with a long opening at bottom, fitted with a slide valve, on the spindle of which there is a float. The end of the spindle is attached to a tumbling lever. As the water flows in, the float will raise the one end of the tumbling lever to a certain point, when the latter will suddenly fall over to the other side, and jerk open the valve, whereby a sudden but equable supply of water will be admitted to the purifyer. When the outflow of water has brought the float down to a certain point, the tumbling lever will fall and suddenly close the valve.

5. The "improvements in obtaining certain substances applicable to purifying gas" consists in combining the chemical substance, as enumerated under the second head of the specification, with sawdust, breeze, &c., and exposing them to the atmosphere for the purpose of absorbing the oxygen.

AMBROISE ADOR, Paris, France, engineer, for "*improvements in producing light.*" Patent dated November 24, 1849.

Gas is supplied from the top of the apartment into a vessel which contains some hydrocarbon. A pipe which opens at top, above the level of the liquid, passes down through it, and terminates in a second spherical vessel placed above the glass chimney. From the latter vessel two pipes descend to the burner. When the burner is lighted it heats the lower spherical vessel, which, being of metal, transmits the heat to the second spherical vessel, and vapourises the hydrocarbon contained therein. The gas entering this upper vessel mingles with the vapour of the hydrocarbon, and descends with it into the second vessel, where the two are heated before passing to the burner.

Claim.—Combining apparatus for vapourizing hydrocarbon with, and intermediate to, a gas burner, and the tube which supplies it with gas.

Miscellaneous News.

THE HYDRO-ELECTRIC LIGHT.—After a period of six years employed in a series of experiments, conducted upon the most philosophical principles, and continued with indefatigable perseverance, Mr. Henry M. Paine, of Worcester, has completed his "Magneto-electric Decomposer," an ingenious apparatus for evolving hydrogen and oxygen gases from water by the agency of electricity generated by mechanical means. The gases thus obtained may be used for light, heat, and motive power, and have already been prctically tested for the two first-named purposes, on a considerable scale, with wonderful effect. At his residence, on Tuesday evening, April 23, Mr. Paine exhibited the operation of his invention to a number of gentlemen in Boston and Worcester, some of whom have had considerable experience in the gas business, and others have taken great interest in plans and projects having in view the production of artificial light at cheaper rates than it can be furnished by the means hitherto employed by gas manufacturers. Mr. Paine had his house brilliantly lighted up, although he used only one small burner for each room. The light was exceedingly strong and white, and so pure that the most delicate shades of blue and green in some coloured prints could be instantly distinguished at a distance of several feet from the burner (a common gas-burner), which was supplied with gas from a pipe whose diameter did not exceed one quarter of an inch. At the same time that the light was being exhibited, the mode of using the gas for heating was also shown. A small jet of *pure hydrogen*, between two circular plates of iron, raised a few inches from the floor, was lighted, and in a few minutes an equal and genial heat was diffused throughout the apartment. Thus the astonished party had the light and heat together, supplied from the same source below, and their expressions of admiration were unbounded; nor were they abated when they were led down into the cellar to examine the exceedingly small machine by which the gas was made. The box containing it was about 18 inches square and 8 in depth. We cannot give the details of the interior of the machine, but will simply state that, as its name indicates, it evolves magneto-electricity by purely mechanical action. From the above-mentioned box there ran flat copper wires into the decomposing jar, which was about two feet in height and six or eight inches in diameter, and partly filled with water; in this jar, by the action of the electricity just spoken of, pure hydrogen gas *alone* was formed from the water, whence it passed into two gasometers or reservoirs, about the size of a barrel each. The pole, at which oxygen gas is liberated, on this occasion passed into the ground, so that hydrogen only was evolved by the action of the machine. The process of carbonizing the hydrogen for illumination is exceedingly simple, and was open to view; it is very cheap, so much so, that Mr. Paine says that the cost of carbonizing the gas he has burned in his house in three burners every evening for a week has not yet amounted to *one cent*. The hydrogen is used for the general purposes of light and heat, and the oxygen can also be secured in a second jar, and may be used with the hydrogen to produce the "calcium light" for lighthouses. Mr. Paine has also discovered a principle by which he can regulate the quantity of electricity to be discharged into the composing jar. A large machine has recently been perfected by Mr. Paine, of sufficient power to supply three thousand burners with gas; it is set up in the Worcester Exchange, and only occupies a space of three feet square by six in height. One cubic foot of water will make 2100 feet of gas, and a weight of 67 lbs. falling nine feet in an hour will make from this larger machine 1000 feet of gas. The apparatus can be applied to gas works of any kind, and be used with any of the gas fixtures at present in fashion.—*Boston (U. S.) Post.*

Advertisements.

H. JONES, Gas Meter Manufacturer, No. 44, OLD-STREET, St. Luke's, London, begs respectfully to call the attention of Gas Companies to his latest improvements in the WET METER, by means of which water cannot be abstracted, neither can Gas by any possibility pass through the Meter without registering.

M. KELLY, Cast Iron Wharf, 31, Bankside, London.—Retorts of superior quality, Socket and Flange Pipes, Bends, Branches, Syphons, and every description of Castings for Gas and Water Works, Gasometers, Tanks, Purifiers, Condensers, &c., erected complete, or the materials supplied.

Gas Valves and Sluice Cocks on an improved principle. Patent Gas Tubing and Connections.

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The Pipes and Retorts supplied by M. K. are cast vertically, which ensures soundness and equality of thickness throughout.

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J. B. warrants all Meters to be manufactured of the best materials and workmanship, the wheels, &c., being of metal. Old Meters repaired on the lowest terms.

RUFFORD'S FIRE-BRICKS, RETORTS, CRUCIBLES, and CLAY. A large stock always on hand, and every description of Fire-proof goods carefully and promptly made to order.

FRANCIS TONGUE RUFFORD
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BRETTELL and WHITEHOUSE, late Brettell and Rufford, beg to inform Gas Companies and others requiring best STOURBRIDGE BRICKS and CLAY that they continue making all kinds of BRICKS, and warrant all their goods fully equal to any house in the trade.

Fire Brick Works, Stourbridge.

TO Gas Companies, Water Companies, and Others.—TO BE DISPOSED OF, about NINETY 24-Inch MAIN PIPES, at — per ton.

Application for particulars as to price, &c., to be made to the Storekeeper at the Chartered Gas Light and Coke Company's Works, Horseferry-road, Westminster.—February, 1850.

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GUTTA Percha Tubing, being unaffected by moisture, acids, alkalies, grease, &c., is useful for the conveyance of Water, Oil, Chemicals, Liquid Manure, &c. It is peculiarly valuable for Drain and Soil Pipes. In case of any stoppage, an incision can be made in the tubing with a sharp knife, and readily closed again by means of a warm iron. Its strength is extraordinary; the small half-inch diameter tubing having resisted a pressure of 250lb. on the square inch without bursting.

Gutta Percha is totally impervious to wet, and may be steeped in water or buried in damp or marshy grounds for years. IT IS NOT SO LIABLE TO INCRUSTATION, and, from its peculiar property as a non-conductor, is not affected so soon by the frost of winter as metal piping.

The smaller sizes of the Tubing may be had in lengths of from 100 to 400 feet, and the larger sizes of 50 feet, each.

The extraordinary power possessed by Gutta Percha Tubing as a CONDUCTOR OF SOUND renders it invaluable for conveying messages from one room or building to another.

Every variety of Gutta Percha Articles manufactured at the Company's Works, Wharf-road, City-road, London; and sold by their Wholesale Dealers in town or country.

ANDREW McLAREN and CO., Steel-yard Wharf, 87, Upper Thames-street, London, have always in Stock a large Assortment of Cast-iron Socket and Hot-water Pipes, Wrought-iron Tubing with Connections, with a variety of goods adapted for every purpose, all of the best quality, and at the lowest price.—Contracts taken to any extent.

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